



Woodchips may reduce carbon dioxide emissions from blast furnace

In a newly-started research project, the use of biocoal is being tested in blast furnace-based manufacturing of steel. This is a new method which may reduce fossil CO2 emissions by up to 30%. The project is being run by Swerea MEFOS which, together with SSAB in Oxelösund, will develop methods and carry out testing on a full industrial scale.

The steel industry is facing major challenges in its repositioning to a more sustainable society. SSAB's blast furnaces are among the most carbon dioxide efficient in the world while, at the same time, the company accounts for approximately 10% of Sweden's emissions of carbon dioxide. The possibilities are already being studied in Oxelösund for fossil-free manufacturing by 2026.

"In our work in reducing carbon dioxide emissions, we work both in the short term as well as the long-term. The biocoal project is an excellent initiative to further reduce levels using today's blast furnace technology. If the tests are successful, some of the current coal and coke can be replaced by biocoal without any major investments, resulting in a greater degree of fossil-free manufacturing", explains Era Kapilashrami, head of metallurgy at Oxelösund.

The purpose of the project is to showcase the possibilities for dealing with pre-treated biomass containing renewable energy, for example residual products from forestry operations. Replacing parts of today's black coal with biocoal can lead to reduced fossil CO2 emissions. There have been promising results in small blast furnaces injected with biocoal, but this has never been tested on a full industrial scale.

The project will commence in September 2017 and the preparation and implementation of operational testing is planned for 2018 – 2019. SSAB in Oxelösund is financing the project in the amount of SEK 13 million.

In 2016, SSAB took the initiative for a fossil-free steel industry (HYBRIT) together with LKAB and Vattenfall. By using hydrogen instead of coke and coal in the steel making, the ambition is to create a process that emits water – instead of carbon dioxide. The research will go on until 2035. If successful, HYBRIT, would mean a major contribution to a fossil-free Sweden.

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